

Serial No. 10/620/882
Art Unit 3752

2

In the Claims

1.(CURRENTLY AMENDED) A method for extinguishing a fire in a mine shaft comprising the steps of:

- a. providing at least one ingress point to said ~~portion of the confined area~~ mine shaft involved in fire;
- b. proportioning a foam concentrate into a stream of non-flammable liquid to form a stream of foam concentrate/liquid mixture;
- c. ~~forming a foam fire suppressant by~~ introducing a gas comprising nitrogen under pressure to said stream of foam concentrate/liquid mixture by a diffuser/dispenser apparatus to expand said foam concentrate in said stream ~~non-flammable liquid~~; and
- d. ~~introducing~~ directing said stream containing said expanded foam fire suppressant through said ingress point.

2.(CURRENTLY AMENDED) The method of claim 1 further including the step of flooding the an area of said mine shaft involved in the fire with water prior to introducing said foam fire suppressant.

3.(CANCELED) The method of claim 1 including the step of forming a seal between a portion of the confined area involved in fire and uninvolved portions of the confined area;

US001:000US:498055:1:LOUISVILLE

Serial No. 10/620/882
Art Unit 3752

3

4.(CURRENTLY AMENDED) The method of claim 3 15 further including the step of drawing out at least a portion of the ambient atmosphere from said area involved in fire after it has been sealed thereby to reduce the amount of oxygen and gaseous fuel available to the fire.

5.(CURRENTLY AMENDED) The method of claim 4 15 wherein said foam fire suppressant is expanded by a dispenser that proportions nitrogen containing gas into a water/foam concentrate stream thereby to initiate expansion of said foam.

6.(ORIGINAL) The method of claim 5 wherein said nitrogen containing gas is proportioned to a water/foam concentrate mixture in a ratio of 2 gallons per minute of said non-flammable liquid/foam concentrate mixture to 1 cfm of said gas.

7.(ORIGINAL) The method of claim 5 wherein said dispenser directs said expanded foam to the sealed portion involved in fire through said ingress point.

8. (CURRENTLY AMENDED) The method of claim 3 15 wherein said seal includes at least one foam ingress point.

9. (CURRENTLY AMENDED) A method for extinguishing a fire in a poorly ventilated area comprising proportioning a foam concentrate into a non-flammable liquid to form a foam concentrate/liquid mixture, creating a flowing stream of said foam concentrate/liquid mixture, said flowing stream being maintained at a pressure of at least 90 psi, introducing a gas consisting essentially of nitrogen under pressure of at least 100 psi to said stream of said foam/liquid

US001:000US:498055:1:LOUISVILLE

Serial No. 10/620/882
Art Unit 3752

4

mixture to form a nitrogen expanded foam fire suppressant, dispensing said nitrogen expanded foam fire suppressant into said poorly ventilated area involved in fire thereby to substantially close off contact between combustible material involved in fire and the ambient atmosphere.

10.(ORIGINAL) The method of claim 9 wherein said non-flammable liquid is water.

11.(ORIGINAL) The method of claim 10 wherein the concentration of said foam concentrate in water comprises between about 0.1% to about 1.0%.

12.(CURRENTLY AMENDED) The method of claim ~~10~~ 1 wherein said gas is proportioned to said stream of water/foam concentrate mixture in a ratio of about 2 gallons per minute of said stream to 1 cfm of said gas.

13.(CURRENTLY AMENDED) Apparatus for expanding and dispensing a fire suppressant foam comprising:

- a. an outer cylindrical casing having end walls defining an interior;
- b. an open ended discharge tube in said interior of said casing, an open end thereof extends through each said end wall of said casing, one open end of said discharge tube communicates with a source of a water/foam concentrate mixture ~~and the opposite open end of said discharge tube defines an egress for dispensing expanded foam~~, an eductor provided in said discharge tube communicates between said discharge tube ~~here~~ and said interior of said casing, a gas intake nipple communicates with said interior of said casing and with a source of pressurized gas for introduction of gas to be drawn into said water/foam concentrate mixture by said eductor

US001:000US:498055:1:LOUISVILLE

Serial No. 10/620/882
Art Unit 3752

5

to form expanded foam and the opposite open end of said discharge tube defines an egress for dispensing expanded foam.

14.(CURRENTLY AMENDED) The apparatus of claim 13 wherein said eductor comprises openings in the wall of said discharge tube, each said opening spaced apart from adjacent openings, a screen disposed on said discharge tube to overlie said openings.

15. (NEW) A method for extinguishing a fire in a mine shaft comprising the steps of forming a seal between an area of said mine shaft involved in fire and uninvolved areas of said mine shaft, providing at least one ingress point to said area of said mine shaft involved in fire, proportioning a foam concentrate into a stream of non-flammable liquid to form a stream of foam concentrate/liquid mixture, introducing a gas comprising nitrogen under pressure to said stream of foam concentrate/liquid mixture by a diffuser/dispenser apparatus to expand said foam concentrate in said stream, introducing said stream containing said expanded foam fire suppressant through said ingress point.

US001:000US:498055:1:LOUISVILLE